ZACKARY SCALYER

STATISTICAL COMPETENCIES

- Conceptual understanding of randomized block, balanced incomplete block, factorial, fractional factorial, and response surface designs.
- Application and assessment of linear, and generalized linear models using R, Python, MATLAB, and SAS.
- Implementation of data mining tools such as neural networks, decision trees, and clustering algorithms using R and Python.

EDUCATION

Villanova University — May 2020

- Master's in Applied Statistics
- Cumulative GPA: 3.73

The Pennsylvania State University, Berks Campus — May 2018

- Bachelor of Science in Kinesiology, Exercise Science Option
- Cumulative GPA: 3.74

ACADEMIC AWARDS

Villanova's Applied Statistics Comprehensive Exam Pass with Distinction honor	April 2020
The Penn State Berks Excellence in Statistics Award	April 2018
Franco Undergraduate Research Award ($1,500)	January 2017
Science Peer Tutor Award: Kinesiology	June 2017
Outstanding Science Internship/Co-op Student Award	June 2017
Science Peer Tutor Award: Mathematics	June 2016

ACADEMIC TEACHING EXPERIENCE

20th Annual Careers with Math Options Conference — **May 2018**

Faculty Adviser: Selvi Jagadesan

- Presented *Measuring Muscles* to female middle school students from Berks County

National Biomechanics Day — **April 2018**

Faculty adviser Dr. Benjamin W. Infantolino

- Musculoskeletal Biomechanics presentation

Peer Academic Leader: The Neurobiology of Motor Control — **Spring 2017**

Faculty adviser Dr. Benjamin W. Infantolino

- Conducted weekly review sessions helping students understand course material

PSU Berks Math, Science, and Statistics tutor — **January 2016 to May 2017**

Faculty Adviser: Dr. Ryan S. Hassler

- Stat 100 Student Mentor: Presented introduction to probability

National Science Foundation (NSF) Engineering Ahead Program — **July 2016, July 2017**

Faculty Adviser: Dr. Ryan S. Hassler

- Program assistant, student mentor, and math tutor

STEM Conference Student Instructor — **March 2016, March 2017**

Faculty Adviser: Dr. Ryan S. Hassler & Dr. Benjamin W. Infantolino

- Real-World Data Analysis Using R
- Ultrasound and muscle anatomy

ZACKARY SCALYER

ACADEMIC RESEARCH EXPERIENCE

American Society of Biomechanics Regional Conference **April 2018**

- Student Chair: Administrative supervisor, recruited moderators for Breakout Sessions

Physics Department Independent Studies **August 2017 to Present**

Faculty Adviser: Dr. Alexei Prokudin

- *Transverse-momentum-dependent Multiplicities of Charged Hadrons*

PSU Berks Biomechanics Research Internship **June 2016 to May 2018**

Faculty adviser Dr. Benjamin W. Infantolino, & Dr. Allison R. Altman-Singles

- *Optimal Fascicle Length Changes Based On Submaximal Force Or Activation*
- Ultrasound imaging, EMG, load cell data collection and data processing
- Vicon Nexus II Motion Analysis System, Bertec Force-Plate Gate Analysis

PSU Berks Funded Engineering Research **May to August 2017**

Faculty Adviser: Dr. Joseph M. Mahoney

- *Design, Calibration and Validation of an Inexpensive Balance Board for Quiet Stance Testing*
- *Joseph M. Mahoney, Zackery E. Scalyer & Matthew B. Rhudy (2018) Design and validation of a simple automated optical step counting method for treadmill walking, Journal of Medical Engineering & Technology, 42:6, 468-474, DOI: 10.1080/03091902.2018.1546343*

PSU Berks Chemistry Research Internship **June to August 2016**

Faculty Adviser: Dr. Katie E. Amaral

- *Organic Chemistry Predicting Outcomes*

PRESENTED RESEARCH

PSU Berks Science Division Poster Session **April 2018**

- The Structure of the Building Blocks of the Universe

41st American Society of Biomechanics Annual Conference **August 2017**

- Poster presentation: Optimal Fascicle Length Changes Based On Submaximal Force Or Activation

18th Annual Undergraduate Research & Creativity Conference **April 2017**

- Poster presentation: Organic Chemistry Predicting Outcomes

American Chemical Society (ACS) Middle Atlantic Regional Meeting (MARM) **June 2017**

- Poster presentation: Organic Chemistry Predicting Outcomes

Biennial Conference on Chemistry Education (BCCE) **June 2016**

- Podium presentation by Dr. Katie E. Amaral: Linear and Generalized Linear Modeling of Organic Chemistry II Grade

MILITARY AWARDS & ACADEMICS

US Marine Corps Certificate of Commendation **July 2010**

- Organized, updated, and developed a referencing system for the hazardous materials accumulation point which resulted in 100 percent accountability of all hazmat aboard Camp Gonsalves, Okinawa.
- Wrote nine safety programs which resulted in zero discrepancies on both fire inspections and the Annual Installation Safety Office Inspection of Work and Living quarters.

Corporals Leadership Course **August 2012**

- 46 hours in-class instruction. Topics included: public speaking, mentoring, leadership

Marine Corps Martial Art Black Belt Instructor **August 2012**

- 158 hours of instructing, certified 39 students